



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Wachendorff-Neumann et al.
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For: Fungicidal combinations of active substances
Art Unit: 1616
Examiner: Alton N. Pryor

Hon. Commissioner of Patents and Trademarks

Washington, D.C. 20231

DECLARATION

I, Ulrike Wachendorff-Neumann, of Oberer Markenweg 85, 56566 Neuwied, Germany, a citizen of Germany, hereby declare:

1. that I am an entomologist having studied at the University of Bonn, Germany;
2. that I received the degree of doctor rer. nat. at the University of Bonn, Germany in the year 1982;
3. that I specialized in the field of entomology and phytopathology;
4. that, I entered the employ of Bayer Aktiengesellschaft, Leverkusen, Germany, in 1982, where I have been employed in the department for the biological development of chemical compounds for plant diseases at Monheim, Germany, that after the spin-off from Bayer CropScience AG I am now employee of this company in the department of Global Biology Fungicides;
5. that the following experiments with the following results have been carried out under my supervision and direction.

Phytophthora test (tomatoes) / protective

Solvent: 24.5 parts by weight of acetone
 24.5 parts by weight of dimethylacetamide
Emulsifier: 1 part by weight of alkylaryl polyglycol ether

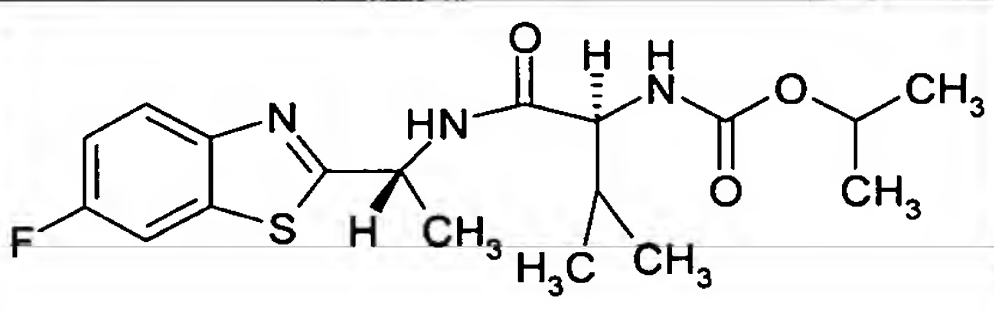
To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amounts of solvent and emulsifier, and the concentrate is diluted with water to the desired concentration.

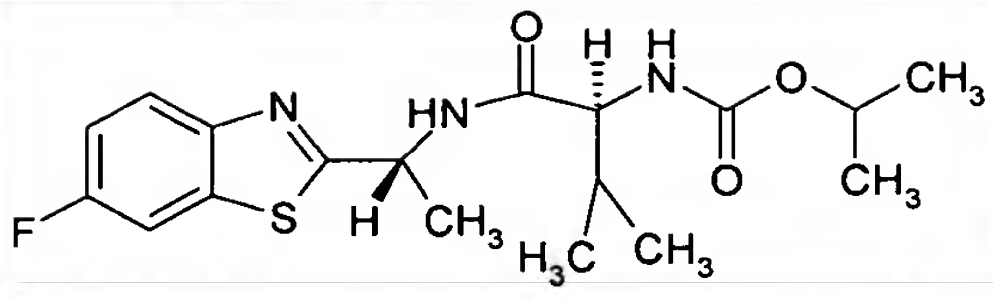
To test for protective activity, young plants are sprayed with the preparation of active compound at the stated rate of application. After the spray coating has dried on, the plants are inoculated with an aqueous spore suspension of *Phytophthora infestans*. The plants are then placed in an incubation cabinet at approximately 20 °C and a relative atmospheric humidity of 100 %.

The test is evaluated 3 days after the inoculation. 0 % means an efficacy which corresponds to that of the control, while an efficacy of 100 % means that no disease is observed.

Results:

Phytophthora test (tomatoes) / protective

Active Compound	Application rate of Active Compound in g/ha	Efficacy in %
	0,5	50
Fosetyl-Al (Ex. XX)	5	2

Inventive compound combination	ratio of the mixture	Applica tion rate of active compo und in g/ha	Actual efficacy in %	Expected value, calculated using Colby's formula
	1:1	0,5	82	51
Fosetyl-Al (Ex. XX)		5		

A synergistic effect of fungicides is always present when the fungicidal activity of the active compound combinations exceeds the total of the activities of the active compounds when applied individually.

The expected activity for a given combination of two active compounds can be calculated as follows (cf. Colby, S.R., "Calculating Synergistic and Antagonistic Responses of Herbicide Combinations", Weeds 15, pages 20-22, 1967):

If

X is the efficacy, when applying the active compound A at a rate of application of active compound of m g/ha,

Y is the efficacy, when applying the active compound B at a rate of application of active compound of n g/ha,

E is the expected efficacy, when applying the active compound A and B at a rates of application of active compound of m and n g/ha,

$$\text{then } E = X + Y - \frac{X \cdot Y}{100}.$$

The table above shows that the observed activity of the active compound combination according to the invention is greater than the calculated activity, i.e. a synergistic effect is present.

The undersigned declarant declares further that all statements made herein of her own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at Monheim, Germany,

4th of August, 2005 
Date Dr. Ulrike Wachendorff-Neumann